

What is claimed is:

1. A monomer protein comprising an amino acid sequence belonging to TGF- β superfamily, of which cysteine related to
5 a dimer formation of the protein has been replaced with another amino acid.
2. The monomer protein according to claim 1, wherein another amino acid is an amino acid selected from the group consisting of serine, threonine, alanine and valine.
- 10 3. The monomer protein according to claim 1 ~~or~~ 2, wherein another amino acid is alanine.
4. A monomer protein comprising an amino acid sequence described in SEQ ID NO.: 2 of the Sequence Listing.
5. A method for expression by using *Escherichia coli*, a
15 yeast, an insect cell, or a mammal cell transformed with a plasmid comprising a DNA sequence that can express a monomer protein according to any one of claims 1 to 4.
- 20 ~~6. An agent comprising the monomer protein according to any one of claims 1 to 4 containing an effective amount of the~~
monomer protein for preventing and treating a disease affecting bone and/or cartilage.
7. The agent for preventing and treating a disease affecting bone and/or cartilage according to claim 6, wherein the disease is osteoporosis.
- 25 8. The agent for preventing and treating a disease affecting bone and/or cartilage according to claim 6, wherein the disease is osteoarthritis or arthroseitis.
9. The agent for preventing and treating a disease affecting bone and/or cartilage according to claim 6, wherein the
30 disease is bone fracture.
10. The agent for preventing and treating a disease affecting bone and/or cartilage according to claim 6, wherein the disease is a lack of root of teeth and a tooth socket.

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